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Triple-loop learning and conversing with reality

Martin Reynolds

Abstract

Purpose: Three levels of learning developed by Gregory Bateson in the tradition of second-order cybernetics have in-part been translated in terms of double-loop and triple-loop learning, particularly in the tradition of systems thinking. Learning III and triple-loop learning have gained less popularity since they deal with less tangible issues regarding virtues of wisdom and justice respectively. This paper provides a learning device – the systems thinking in practice heuristic – which helps to retrieve the cybernetic concern for wisdom in association with an often forgotten systems concern for real-world power relations.

Approach: Using ‘conversation’ as a metaphor the heuristic is introduced based on three orders of conversation. Drawing on ideas of systemic triangulation, another heuristic device – the systemic triangulator – is used to surface issues of power in the three orders of conversation. Some manifestations in using the systems thinking in practice heuristic for supporting postgraduate systems learning are demonstrated.

Findings: Some key complementarities between conventionally opaque cybernetic issues of wisdom and systems issues of power are revealed, and used proactively to explore more effective coaching of systems thinking in practice.

Implications: Cybernetics and Systems thinking may benefit from being grounded more in understanding, engaging with, and transforming social realities. The heuristics provide practical experiential and meaningful learning through conversation, and more social premium for the study of cybernetics and systems thinking.

Originality/value: The heuristics – systems thinking in practice, and the systemic triangulator – provides an innovative cyber-systemic space for learning and action.

Keywords: systemic triangulation, systemic triangulator, systems thinking in practice, triple-loop learning

Introduction

One of the basic tenets of the systems field is that there is no such thing as anything. It's all *perception*.¹

The practice of contemporary systems thinking and second-order cybernetics can sometimes be caricatured as being either divorced from reality or somehow misrepresenting reality. In this paper I explore the use of triple-loop learning from the systems tradition and Learning III from the cybernetics tradition to highlight the potential of nurturing a wider, arguably neglected, learning space for understanding, engaging and transforming social realities. The proposed cyber-systemic

¹ A posting from an eminent member of the American Evaluation Association on the AEA Discussion List, EVALTALK, 28th March 2013

space uses 'conversation' as a metaphor for practice and embraces three core systems concepts – inter-relationships, multiple perspectives, and boundary judgements – for making explicit the value base and political dimensions of systemic learning. Drawing on a pedagogic innovation at the Open University, which uses 'conversation' as a key cybernetic metaphor, triple-loop learning is explored as part of a more ethically and politically informed nurturing and coaching of systems thinking in practise involving what might be tentatively termed a third-order conversation.

Triple-loop learning

Triple-loop learning derives from cybernetic ideas of levels of learning (Bateson, 1972). Two particular levels – proto-learning and deutero-learning, translated in terms of single and double loops of learning respectively – have acquired significant resonance in cognitive sciences, action research, reflective practice, and particularly organisational learning; in the latter case with the pioneering work of Chris Argyris and Donald Schön (Argyris & Schön 1974, 1978). Double-loop learning has also acquired significance in the lexicon of systems thinking and practice; possibly the most prominent exponent being Russell Ackoff (1974).

From a systems perspective - where 'systems' are generally understood as serving some particular purpose - the essential difference between the single and double loop is that the former accepts goals as given, whereas the latter involves questioning and possibly changing goals or aspirations. Such ideas resonate with purposive and purposeful systems thinking respectively. Single-loop learning is associated with what Ackoff and Emery (1972) would call goal-seeking purposive systems, whilst double-loop learning is associated with goal-searching purposeful systems. The two can be summarised by questions raised through each loop: (i) Are we doing things right? (single loop) and (ii) Are we doing the right things? (double loop). An absence of double-loop learning invites concern that technical or operational expertise can ensue without ethical reflection on the rightfulness or wrongfulness of the operation; inviting the Ackoff quip regarding conventional management as often 'doing the wrong things righter'.

The usefulness of what Bateson (1972) refers to as the next learning level, Learning III appears less evident in systems thinking. Whilst Learning II involves learning about learning, Bateson views Learning III as involving a deeper more profound learning experience. One way of distinguishing this level is that it occupies a change in *being* as against a change in *doing*. It invites aspects of virtue – particularly the virtue of wisdom – in being aware, rather than aspects of training in doing things better, or even an awareness of doing better things, as with acquiring technical or ethical competence. Learning III as described by Bateson requires going beyond the self-validating nature of proto-learning and deutero-learning. Bateson's Learning III requires a different level of learning; what Peter Reason refers to as a meta-framework (Reason, 1991 p.149). Translating this in terms of systems practice is understandably more challenging.

Flood and Romm (1996) in a book entitled *Diversity Management: Triple Loop Learning* introduce their third loop in terms of addressing the *political* dimension behind learning. The question they raise is what relations of power might circumscribe particular purposes being privileged or valued, whilst other purposes are not so valued. This third dimension goes beyond looking at 'what is the right thing' (an essentially ethical question) towards appreciating that the right thing might appear 'right' because of the power invested in those who espouse what is right. This is a political question. The third loop asks: (iii) Is rightness buttressed by mightiness and/or mightiness by rightness?

This third loop of learning suggests coercive relations of power associated with either domination of (a) decision making 'might' - a relationship of 'power-over' - or conversely (b) knowledge based sense of what's 'right' - a relationship of 'power-with':

- (a) Might over right: 'decision makers' associated with a particular situation are those in authority with control over resources (including human resources). Mightiness can be expressed through, for example, micro-management of a workforce (or 'bossism'), or through more general forces of corporatism or capitalism. The ethical concerns of rightness are typically given minor attention.
- (b) Right with might: 'experts' are those with particular expert judgements associated with a situation with power vested with their knowledge/expertise. Notions of 'rightness' can be expressed through, for example, allegiances of 'groupthink' - the sharing with others of particular knowledge/experiences, or more general allegiances of knowledge and know-how through, for example, practices of scientism (objectivism), economism or theological fundamentalisms.

These expressions of power relations can sometimes be referred to in terms of (a) decisionism (*power over* resources such as money - plutocracy) and (b) technocentrism (*power with* specialist knowledge claims - expertocracy or meritocracy) respectively.

The relative failure of triple-loop learning to gain traction in systems practice triggers questions regarding the potential loss of deeper understanding of Learning III provided by Bateson. Flood and Romm make little reference to Bateson outside of a footnote deep into the book: "Learning III processes bears some resemblance to our conception of shifting attention...as we triple loop. Learning III is linked up with what we call a capacity for reflexivity..." (Flood & Romm, 1996, p.186 fnote 4). Is there room for bringing together the attribute of 'wisdom' associated with Learning III and the equally virtuous attributes of 'justice' and power relations associated with triple-loop learning? What perhaps is required is a better conversation between ethical notions of wisdom and socio-political awareness and concerns over realpolitik; between a 2nd order cybernetics-oriented concern for value and ethics, and a systems-oriented 1st order concern for improving real world messes and social justice.

To help nurture this conversation I present a learning device - a cyber-systemic space or heuristic - based itself on the metaphor of conversation. Two expressions of this heuristic are provided - a primary 'systems thinking in practice' heuristic, and a secondary 'systemic triangulator' heuristic. The rationale behind the development of these heuristics are described below, followed by a brief explanation of their pedagogic use in coaching a 3rd order of learning in systems thinking in practice.

Learning and conversation

Retrieving first-order conversation

The 2013 American Society for Cybernetics (ASC) conference used 'conversation' as a principle for organising proceedings based on the importance of second-order cybernetics (cf. von Foerster, 2003). Conversations encompassing *reflection* of observers are here regarded as of greater value than the more linear format in *presentations* of the observed. The conversations were structured around the three conference themes of 'acting, learning, and understanding'. Most delegates clearly

valued these small group conversations and wider plenary conversations. Attention was focused on emergent insights arising from both the intra-group conversations and the inter-group conversations during plenary sessions. Formal academic presentations of papers was relegated to a single evening session within the 3-day conference schedule. As a newcomer to ASC conferences, I personally found this emphasis on conversation rather than presentation refreshingly insightful and enjoyable.

At the final plenary session two concerns were expressed, which are relevant perhaps to the need for different types of conversation. Firstly, a degree of frustration was expressed by some participants that the conversations over three days were becoming somewhat self-referential. The circularity of conversation around the three conference themes was regarded by some to have disengaged the conference from the 'real world'. Some experienced this as a lost opportunity to engage in the complex and conflict-ridden issues of, say, poverty and injustice, to which ideas of cybernetics and systems thinking might helpfully be applied. Secondly, there was a claim that focusing on conference themes as set out in terms of 'acting, learning and understanding' was effectively 'doing violence to reality'. Is there something in 'reality' that is not captured by these themes and/or the suggested ordering of the themes?

The two concerns reflect a more general concern regarding a dis-engagement with reality; an emphasis on 2nd order cybernetics with a possible loss of attention to 1st order cybernetics. Might there be a need to connect more with the essential power relations underpinning social reality? Figure 1 illustrates the distinction as between two types of conversation, and the relative emphasis given to value judgements and factual judgements in each conversation. Whereas conventional conversation might be regarded as 2nd order, the 1st order 'conversation' arrows represent a cycle of influences – where 'facts' can never be regarded as value-free, and where 'values' are always context-related.

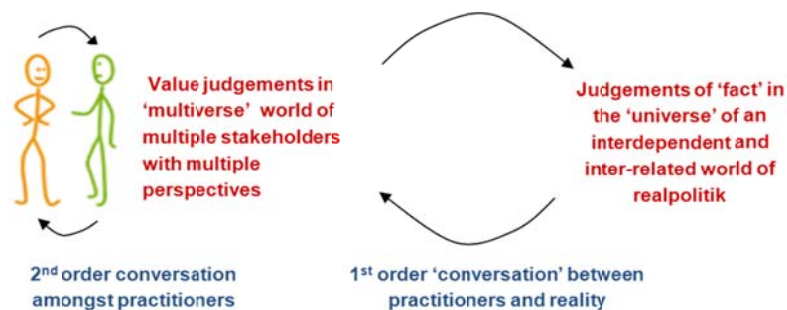


Figure 1 Two 'conversations' associated with 1st and 2nd order cybernetics in relation to making judgements

The learning generated from such conversations is likely to be impoverished where one type of conversation is undertaken to the exclusion of another. Clearly, the metaphorical 'conversation' between practitioners and reality is as important to progressing learning as is the actual conversation amongst practitioners. Systems thinking as a complement to 2nd order cybernetics may deal more explicitly with this 1st order deficit.

A learning device – or heuristic – is suggested that uses conversation not only as an underpinning metaphor of systems thinking in practice, but invites attention to a reflective third-order of conversation.

Towards third-order conversations

The heuristic - systems thinking in practice (STiP) - is the namesake of the postgraduate set of qualifications delivered through distance learning by the UK-based Open University. Developed by the author with STiP colleagues, the heuristic is used in one of the core modules (Open University, 2012) associated with the STiP programme. The heuristic is based on three entities – inter-relationships, multiple perspectives, and boundary judgements. These are real world entities. The world consist of infinite inter-related parts (cf. Lorenz, 1963) and multiple and bounded perspectives on the inter-relatedness (cf. Maturana & Varela, 1980). Moreover, the boundaries in our thinking – whether explicitly systems thinking or not – require continual ethical and political reflection and judgement (cf. Churchman, 1979). These three real-world entities might be claimed as defining features of contemporary systems thinking (Reynolds & Holwell, 2010; Williams, 2013).

The three entities can be associated with three corresponding activities – *understanding* interrelationships, *engaging* with multiple perspectives, and *reflecting* on boundary judgements. Figure 2 depicts these entities and associated activities in terms of a heuristic.

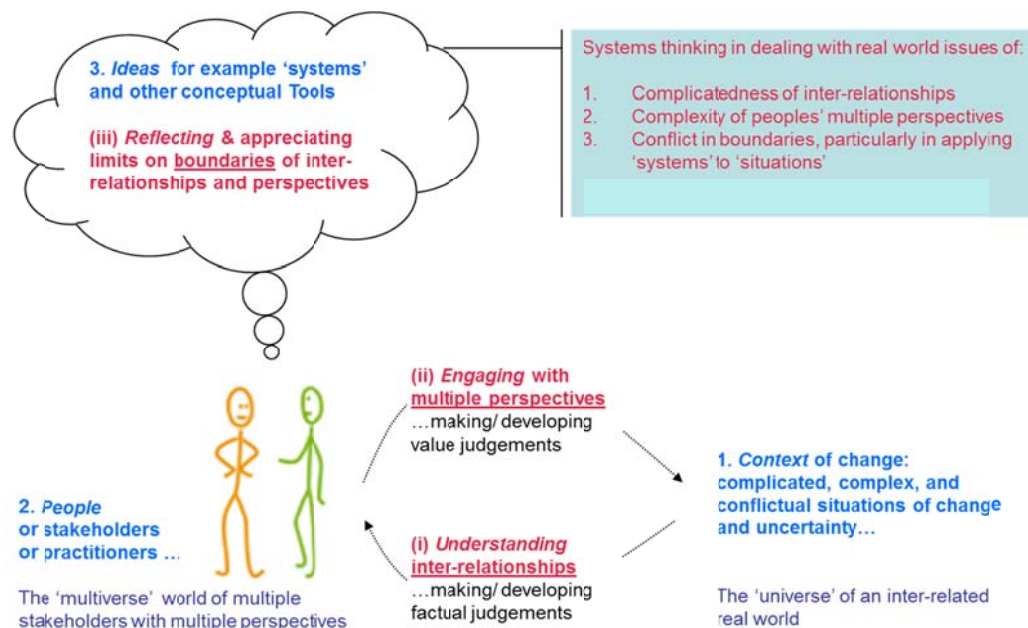


Figure 2 Systems thinking in practice heuristic
(Adapted from Reynolds, 2011)

Whereas the domain or 'context' of change in Figure 2 represents the real world for making factual judgements, the domain of 'people' or stakeholders more clearly represents the world of value judgements. The third domain of 'ideas', although sequentially numbered after the factual and value-driven worlds actually provides a mediating world that clearly informs the way in which we

frame reality as well as the way in which values are framed when engaging with other perspectives on the reality. These three domains resonate with ideas on boundary critique and systemic triangulation expressed by Werner Ulrich (e.g. Ulrich 2003; Ulrich & Reynolds, 2010) and referred to in the next section. The third domain represents more the domain of wisdom, itself connecting up with both first-order and second-order conversations, and corresponding with Learning III in cybernetics and reflection on boundary judgements of triple-loop learning in systems thinking.

The following section explores the dynamic workings of the heuristic in terms of power relations.

Learning and Power

In triple loop learning mention was made to the importance of exploring negative connotations of two power dynamics – ‘might over right’ (cf. decisionism) and ‘right with might’ (cf. technocentrism). The two generic dynamics – ‘power-over’ and ‘power-with’ – can be explored more benignly along with an important third dynamic – ‘power-to’ – in terms of cyber-systemic learning.

Power-over: doing violence and the paradox of framing in systems thinking

“Are we not doing violence to reality?” (Comment from delegate at American Society for Cybernetics annual conference on the three conference themes – acting, learning and understanding - 1st August 2013)

The three activities in Figure 2 correspond with the 2013 ASC conference themes of ‘acting’ (engaging), ‘learning’ (reflecting), and understanding. To what extent are the expression of these entities and activities actually, as suggested by one conference delegate, doing violence to reality?

From a systems thinking perspective, there is always inevitable violence to reality in making any representation or framing. Ronald Moore makes a similar point in relation to what he calls the ‘framing paradox’ in making any representation of our natural world (Moore, 2006). The paradox relates to the distinction made between an intuitive unframed or unbounded aesthetic value of nature in its holistic qualities as experienced by humans and the creation of an aesthetic experience through various art forms relating to nature including narratives of nature as much as the framing of pictures. Towards the end of his article, Moore makes reference to the influential philosophical pragmatist and American educational reformer John Dewey (1859-1952). Dewey suggested that we develop aesthetic value by converting undifferentiated experiences into more focused experiences. Such experiences are bounded whole units with distinctive beginnings, middles and ends. Such focused attention lends value to the purposeful framing process. As Moore (2006, p.265) suggests, Dewey fundamentally asserts that:

Aesthetic value invariably arises out of experiences rendered whole and comprehensible by being articulated, i.e., by being separated out from the run of the rest of experience by acts of focal attention [and that this] correctly and powerfully expresses the importance of framing in aesthetic living.

The relation of power in framing reality represents a power-over dynamic.

From a pragmatist viewpoint the degree of ‘violence to reality’ might be measured by how much the framing contributes towards some collegiate engagement with other perspectives - represented by a power-with dynamic - and a focus on improvement in the reality – represented by a power-to dynamic.

Power-with: doing pragmatism with purposeful systems thinking

Systems are conceptual framing devices. In relation to intervention (e.g. the design or evaluation of a policy, programme or project etc.) systems can be considered as ways of framing messy situations in a purposeful manner. There are many ways of attempting this through the use of systems thinking tools namely: cognitive maps, systems maps, influence diagramming, multiple cause diagrams, system dynamics models and archetypes and so forth. Rose Armson, drawing on the work of Peter Checkland, gives one powerful generic shorthand expression of systems as ‘what/how/why’ systems. The focus from a systems perspective is in asking questions of (i) ‘what’ (the intervention is intended to do)? (ii) ‘how’ (the intervention is meant to do what it is meant to do)?, and (iii) why (the intervention is worthwhile doing)? (Armson, 2011). In effect, there is a beginning, a middle, and an end while in Dewey’s language there is an enduring ‘form’ to the analysis.

The ‘form’ of what/how/why questions are recursive; the questions might be expanded at a higher level of systemic inquiry, in moving from a precise intervention towards an understanding of more generic incidences of systemic failure. So exploring systemic failure in, say, managing poverty alleviation or managing health, finance, education etc., there is a need to examine: firstly, *what* inter-relationships and interdependencies are understood as being relevant; secondly, *how* these inter-relationships might be perceived from, and engaged with, different perspectives; and thirdly, *why* some inter-relationships are deemed relevant and some perspectives are privileged over others. Such questions are imperative not only to understanding reality but as a means of literally avoiding ‘talking at cross-purposes’ with other stakeholders in a power-with dynamic; with an ultimate goal for improving reality.

Power-to: applying wisdom to boundary judgements

The value of systemic framing is less one of representing (i.e. violating or celebrating) reality but rather one of improving reality. Any boundary judgements have the effect of ‘violating’ reality in the sense that real world interconnections are broken by the act of our bounded framing. The paradox lies in that such violations (or *misrepresentations* of framings which inevitably are incomplete and biased) – through purposeful systems thinking in practice – ought to have the potential for improving the real world. The power dynamic here is one of moving from ‘power-over’ and ‘power-with’ towards a ‘power-to’ dynamic.

At this level of inquiry Armson’s (2011) three questions of a system – what/how/why - synchronise with the three loops of learning respectively. ‘Doing things right’ requires an understanding of *relevant* inter-relationships. Questioning whether ‘the right things are being done’ requires engaging with different perspectives in *privileging* what needs to be done. Questioning the wider influences of power relations at play in determining what might *justifiably* be deemed relevant and privileged requires reflecting on boundaries of framing. The third loop of learning is about all three power relations and politics, but it is also about the wisdom in being systemically reflective over institutionalised boundary judgements.

An eternal triangle of interplay between judgements of ‘fact’, value judgements, and boundary judgements constitutes what Werner Ulrich calls ‘systemic triangulation’ in his description of boundary critique (Ulrich, 2003 p.334):

Thinking through the triangle means to consider each of its corners in the light of the other two. For example, what new facts become relevant if we expand the boundaries of the reference system or

modify our value judgments? How do our valuations look if we consider new facts that refer to a modified reference system? In what way may our reference system fail to do justice to the perspective of different stakeholder groups? Any claim that does not reflect on the underpinning 'triangle' of boundary judgments, judgments of facts, and value judgments, risks claiming too much, by not disclosing its built-in selectivity.

Figure 3 uses this idea of systemic triangulation in terms of a secondary heuristic – the systemic triangulator - building on ideas of first and second order conversations (Figure 1) and the systems thinking in practice heuristic (Figure 2). The arrows between the pillars of the triangle represent the dynamic influences (or confluences) between real world 'issues' of fact, agency of values, and the justification of boundaries. Justifying boundary judgements requires virtues of wisdom as well as justice.

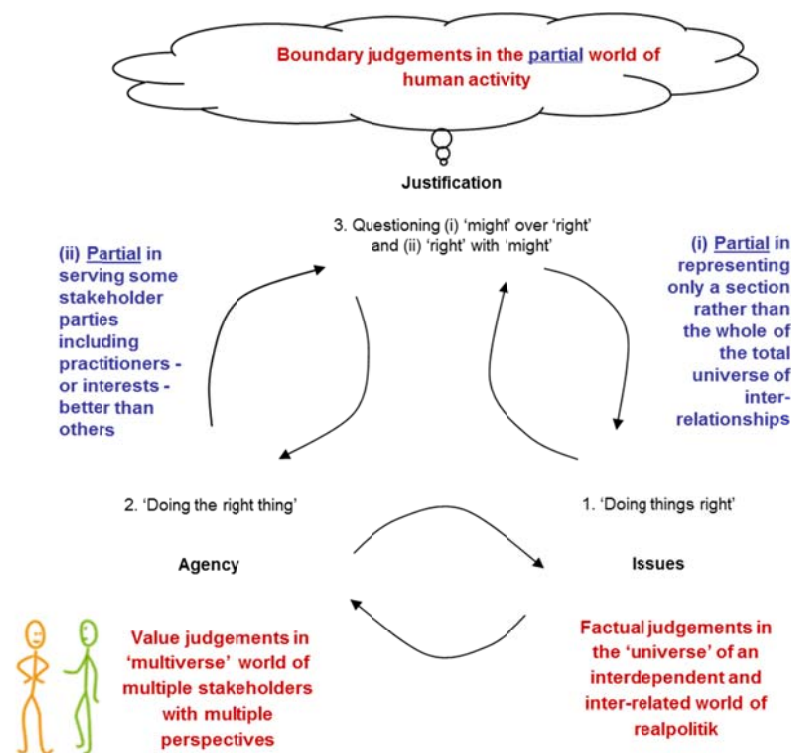


Figure 3: Systemic triangulator of third-order conversation: framing the confluence between issues, agency and justification

As with the STIP heuristic in Figure 2, the systemic triangulator works at different levels of recursion (e.g. from an inquiry into organising a short holiday to an inquiry into the politics of the tourism industry). To illustrate this third order conversation, take the complex situation of energy security. The two base pillars of triadic interplay involve factual and value judgments. Firstly, there are particular 'issues' of reality (factual judgements) in any contextual bounding of inter-relationships that matter, e.g. alternative sources of energy supply or issues of energy demand/consumption/waste. Secondly, some notion of 'agency' is needed regarding who matters and how e.g., oil companies, transport companies, government agencies, environmental groups, individuals as consumers and/or citizens, etc. – all with respect to different perspectives (reflecting value

judgements) on how issues of energy security need to be addressed. The third pillar provides a reflective overview of the other two pillars in justifying the boundary judgements that inform the 'issues' that matter and the 'agency' of who matters. Asking questions regarding who is benefiting and who is not benefiting from say, alternative fuel sources or high energy consumption, and what rationales are employed to justify such benefits and harms, provides clarity on why some issues are deemed important and some perspectives are privileged over others. Conversations on energy security in different contexts are clearly circumscribed by the 'might' expressed typically through vested interests *over* industrial and economic growth. Similarly human and ecological 'rights' are expressed through interests associated *with*, say, climate change and/or social justice.

Political space is required for addressing complicated changing realities and working with different, complex, and often conflicting perspectives. Whereas the first two pillars invite single and double loop learning respectively, the third pillar signals a concern for institutional power relations that circumscribe judgements on what's operationally 'good' practice (as a measure of 'mightiness' - doing things right) and what managerially may be regarded as the 'right' thing to do (as a measure of 'rightness' - doing what's right). The third order conversation requires wisdom and a sense of justice in terms of acknowledging and transforming coercive thinking in practice. Mary Parker Follett (1868-1933) insightfully referred to a similar power dynamic in terms of generating a 'creative experience' (Follett, 1924).

Cultivating wisdom through systems thinking in practice

Experience is the power-house where purposes and will, thought and ideals, are being generated. I am not of course denying that the main process of life is that of testing, verifying, comparing. To compare and to select is always the process of education. . . . When you get to a situation it becomes what it was plus you; you are responding to the situation plus yourself, that is, to the relation between it and yourself... Life is not a movie for us; you can never watch life because you are always *in* life... [T]he 'progressive integrations,' the ceaseless interweavings of new specific respondings, is the whole forward moving of existence; there is no adventure for those who stand at the counters of life and match samples. (Follett 1924, p. 133-134)

Two imperatives of cultivating systems thinking – understanding inter-relationships and engaging with multiple perspectives – can be regarded as supporting first-order and second-order conversations respectively. Part of the reality being mapped in the first-order conversation might be the relations of power existing in the situation – e.g. who gets what? who owns what? who does what? Similarly, part of the second-order conversation of engaging different perspectives might attend to the power or forcefulness of particular viewpoints/ perspectives over others – what is deemed to be the 'right thing'?

Cultivating wisdom requires a third-order conversation beyond understanding inter-relationships and engaging with multiple perspectives. It involves reflecting on the existing 'system' (i.e. the boundary judgements) and relations of power that underpin the system – both 'power-over' relations and 'power-with' relations – as a means of creatively working with others towards a better – 'power-to' – design of systems.

Notwithstanding the limitations of cultivating wisdom through formal 'teaching', Open University postgraduate students undertaking the core STiP module (Open University, 2012) are guided through their use of the heuristic as part of what is intended to be a creative experience. Each part-time student nominates an area of practice – usually a professional domain in which they already work or aspire to work – in order to then apply systems techniques. Techniques are provided from a range of systems approaches. But unlike conventional systems teaching of a standardised use of techniques, students develop their own practice in using techniques through guided experimentation involving first and second order conversation (through individual engagement with an area of practice and online forum discussions). The third order conversation prompts alertness to ethical and political issues. Here students are encouraged to adaptively apply and experiment with their own use of techniques and ideas. Some tools like the 'sources of control and sources of knowledge' components of critical systems heuristics are clearly helpful in surfacing power relations, but many other tools – inside and outside systems traditions – can be helpful depending on the context of use, the experiences of the user and the wisdom in adaptation.

Summary

Triple-loop learning (TLL) from Systems is a different beast from Learning III from cybernetics. But as with double-loop learning and deuterio-learning, there are parallels. For systems, TLL is about relations of power and the virtue of social justice. For cybernetics, Learning III is about the virtue of wisdom. Both ideas might be regarded as being somewhat unfathomable, lacking traction or even intractable. The STiP heuristic outlined here draws on the metaphor of conversation – salient in both contemporary systems and 2nd-order cybernetics traditions – in order to draw on the creative aspects of power and wisdom in a practical manner.

In first-order conversation – understanding inter-relationships – TLL invites attention to incidences of power –over relationships in the situation being examined, alongside incidences of power-with and power-to relations, as part of this wider appreciation of inter-relationships. What are the dynamics of realpolitik in the situation? In second-order conversation – engaging with multiple perspectives – TLL invites particular attention to 'power-with' dynamics: 'the force of the better argument' or 'the privilege given to some authoritative perspective'. How are value judgements regarding 'what's right' expressed?

Third-order conversation – reflecting on boundary judgments – is not simply passive reflection but rather an active imperative – a 'power-to' drive –for improving the reality being engaged with. The types of conversation involved here retrieves a focus on reality against the claim that systems is only about *perception*. Moreover the heuristic signals the importance attached in both traditions to positively – with wisdom and justice – transforming rather than "doing violence to" – reality.

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